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10/729,166	12/05/2003	Manish Anand Bhide	JP920030164US1	8579

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Frederick W. Gibb, III
McGinn & Gibb, PLLC
Suite 304
2568-A Riva Road
Annapolis, MD 21401

EXAMINER	
SYED, FARHAN M	

ART UNIT	PAPER NUMBER
2165	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/729,166	BHIDE ET AL.	
	Examiner	Art Unit	
	Farhan M. Syed	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are pending.

Applicant's Remarks

Drawings/Specifications

2. Applicant's arguments, see page 10, filed 28 July 2006, with respect to the drawings have been fully considered and are persuasive. The objection of the drawings in the non-final action dated 19 May 2006 has been withdrawn.

Applicant's Arguments

3. Applicant's arguments filed 18 July 2006 have been fully considered but they are not persuasive for the reasons set forth below.

Applicant argues:

"However, the Applicants' claimed invention, as provided in amended independent claims 1 and 13-15 contain features, which are patentably distinguishable from Dayal. Specifically, claims 1 and 13-15 recite, in part, '... registering alarms associated with start and end of a lifespan of each temporal event; selectively deploying and selectively permanently removing temporal events form said database based upon the changed temporal constraints; and upon reaching said end of said lifespan of said each temporal event, permanently removing from said database said alarm associated with the permanently removed temporal event.' These features are neither taught or

suggested in Dayal because in Dayal the temporal events are not physically completely removed from the database."

The Examiner respectfully disagrees. Dayal teaches a method of monitoring events in a database, said method comprising: (i.e. *"An active database system, in contrast, is a database system that monitors situations of interest, and when they occur, triggers an appropriate response in a timely manner."* The preceding text clearly indicates that monitoring events in a database is an active database system.)(Page 1, paragraph 3): storing in said database at least one database rule (i.e. *"The desired behavior is expressed in production rules (also called event-condition-action rules), which are defined and stored in the database."* The preceding text clearly indicates that storing production rules indicates that at least one rule is stored in the database.)(Page 1, paragraph 3); mapping temporal constraints of an event of the database rule to corresponding temporal events (i.e. *"An inference engine cycles through all the rules in the system, matching the condition parts of the rules with the data in working memory."* The preceding text clearly indicates that mapping is matching and temporal constraints are conditions that contain time and event.)(Page 1, paragraph 3); changing said temporal constraints associated with the temporal events based upon temporal constraints for related events of the database rule (i.e. *"The action part may modify the working memory, possibly according to the matched data, and the cycle continues until no more rules match."* The preceding text clearly indicates that changing the temporal constraints is modifying the condition, which is the action part of the working memory.)(Page 1, paragraph 3); registering alarms associated with a start and end of a lifespan of each temporal event (i.e. *"...a rule is triggered whenever one or more of its triggering operation occurs." "In addition, active database systems must provide mechanisms for event detection and rule triggering, for condition testing, for rule action execution, and for user development of rule applications."* The preceding text clearly indicates that registering alarms associated with each temporal event is an illustration of a triggering

operation. Furthermore, using an active database, an ordinary person skilled in the art may reasonably infer that such alarms are anticipated in the database system, because for an active database system to be active, it must do event detection, and registering alarms illustrates such a point.)(Page 14, section 3.3; Pages 17-18; section 4); selectively deploying and selectively permanently removing the temporal events from database based upon said changed temporal constraints (i.e. *"Rules are structured objects, having events, conditions and actions as their components. Like any object, rules can be created, deleted, or modified. In addition, rule objects have some special operations, including: fire, which causes a rule to be triggered; enable, which cases a rule to be activated; disable, which causes a rule to be deactivated (so that it won't be triggered even if its triggered event occurs." "Rules refer to particular tables, and so are subject to the same controls as other metadata objects (e.g. views, constraints); thus if a table is dropped, all rules defined for it are no longer operative."* The preceding text clearly indicates that selectively deploying is enable, which cases the trigger to be activated and selectively removing is disable, which cases the trigger to be deactivated. Furthermore when a table is dropped, an ordinary person skilled in the art anticipates that the table is either deleted or removed from the database, thus it can be inferred that the table is permanently removed; which by proxy would infer the temporal events would too be permanently removed.)(Page 3, paragraph 3; Page 9, section 2.5); upon reaching said end of said lifespan of said each temporal event, permanently removing from said database said alarms associated with the permanent removed temporal event (i.e. *"Rules refer to particular tables, and so are subject to the same controls as other metadata objects (e.g. views, constraints); thus if a table is dropped, all rules defined for it are no longer operative."* When a table is dropped, an ordinary person skilled in the art may reasonably infer that the skilled person can remove the table from the database and thereby manually remove all temporal constraints and alarms associated with the targeted table. The manual removal of the temporal constraints and associated alarms are consistent with a natural human phenomenon, when the skilled person performs duly maintenance on the database. Whether manually or dynamically performed, no novelty exists in optimizing system efficiency.)(Page 9, section 2.5).

Any other arguments by the applicant are either more limiting than the claimed language or completely irrelevant.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by a non-patent literature titled "Active Database Systems" by Umeshwar Dayal, Eric N. Hanson, and Jennifer Wisdom, Addison-Wesley, Sept. 2004 (and known hereinafter as Dayal).

As per claims 1 and 13-15, The Examiner respectfully disagrees. Dayal teaches a method of monitoring events in a database, said method comprising: (i.e. *"An active database system, in contrast, is a database system that monitors situations of interest, and when they occur, triggers an appropriate response in a timely manner."* The preceding text clearly indicates that monitoring events in a database is an active database system.)(Page 1, paragraph 3): storing in said database at least one database rule (i.e. *"The desired behavior is expressed in production rules (also called event-condition-action rules), which are defined and stored in the database."* The preceding text clearly indicates that storing production rules indicates that at least one rule is stored in the database.)(Page 1, paragraph 3); mapping temporal constraints of an event of the database

rule to corresponding temporal events (i.e. *"An inference engine cycles through all the rules in the system, matching the condition parts of the rules with the data in working memory."* The preceding text clearly indicates that mapping is matching and temporal constraints are conditions that contain time and event.)(Page 1, paragraph 3); changing said temporal constraints associated with the temporal events based upon temporal constraints for related events of the database rule (i.e. *"The action part may modify the working memory, possibly according to the matched data, and the cycle continues until no more rules match."* The preceding text clearly indicates that changing the temporal constraints is modifying the condition, which is the action part of the working memory.)(Page 1, paragraph 3); registering alarms associated with a start and end of a lifespan of each temporal event (i.e. *"...a rule is triggered whenever one or more of its triggering operation occurs." "In addition, active database systems must provide mechanisms for event detection and rule triggering, for condition testing, for rule action execution, and for user development of rule applications."* The preceding text clearly indicates that registering alarms associated with each temporal event is an illustration of a triggering operation. Furthermore, using an active database, an ordinary person skilled in the art may reasonably infer that such alarms are anticipated in the database system, because for an active database system to be active, it must do event detection, and registering alarms illustrates such a point.)(Page 14, section 3.3; Pages 17-18; section 4); selectively deploying and selectively permanently removing the temporal events from database based upon said changed temporal constraints (i.e. *"Rules are structured objects, having events, conditions and actions as their components. Like any object, rules can be created, deleted, or modified. In addition, rule objects have some special operations, including: fire, which causes a rule to be triggered; enable, which cases a rule to be activated; disable, which causes a rule to be deactivated (so that it won't be triggered even if its triggered event occurs." "Rules refer to particular tables, and so are subject to the same controls as other metadata objects (e.g. views, constraints); thus if a table is dropped, all rules defined for it are no longer operative."* The preceding text clearly indicates that selectively deploying is enable, which cases the

trigger to be activated and selectively removing is disable, which cases the trigger to be deactivated. Furthermore when a table is dropped, an ordinary person skilled in the art anticipates that the table is either deleted or removed from the database, thus it can be inferred that the table is permanently removed; which by proxy would infer the temporal events would too be permanently removed.)(Page 3, paragraph 3; Page 9, section 2.5); upon reaching said end of said lifespan of said each temporal event, permanently removing from said database said alarms associated with the permanent removed temporal event (i.e. *"Rules refer to particular tables, and so are subject to the same controls as other metadata objects (e.g. views, constraints); thus if a table is dropped, all rules defined for it are no longer operative."* When a table is dropped, an ordinary person skilled in the art may reasonably infer that the skilled person can remove the table from the database and thereby manually remove all temporal constraints and alarms associated with the targeted table. The manual removal of the temporal constraints and associated alarms are consistent with a natural human phenomenon, when the skilled person performs duly maintenance on the database. Whether manually or dynamically performed, no novelty exists in optimizing system efficiency.)(Page 9, section 2.5).

As per claim 2, Dayal teaches a method further comprising removing from the database temporal events that cannot evaluate as true (i.e. *"Most database rule systems handle errors during rule processing by aborting the current transaction, since this is how conventional database systems typically handle errors during transaction processing."*)(Page 17, paragraph 2).

As per claim 3, Dayal teaches a method further comprising limiting the lifespan of an event to the overlapping period of the lifespan of a parent event (i.e. *"The nested transaction model used in HiPAC allows some of these possibilities. When a rule execution sub transaction fails, the failure event is returned to its parent, which has the option of spawning a sibling subtransaction to repair the error (this may be accomplished through the firing of another rule that is*

triggered by the failure event). Alternatively, failure can be propagated up the transaction tree all the way to the root (top) transaction.")(Page 17, paragraph 3).

As per claim 4, Dayal teaches a method further comprising changing the lifespan of an event to omit periods in which the event cannot evaluate as true (i.e. *"In general, when a triggered rule is executed in Ariel, the rule processes the entire set of triggering changes, including both the user-generated changes that initiated the rule processing and any subsequent changes made by rule actions" "Some languages have sequential execution semantics, while others allow concurrent execution. With either sequential or concurrent execution semantics, there is also the issue of whether one rule can trigger the execution of another rule or of (another instance of) the same rule. Clearly, if such nested triggering is allowed, termination is a concern."* The preceding text clearly indicates that when the author mentioned termination is a concern, an ordinary person skilled in the art understands that termination or abort must take place when the event cannot evaluate as true.)(Page 12, paragraph 1; page 11, paragraph 1).

As per claim 5, Dayal teaches a method further comprising assigning a lifespan of an event having an undefined lifespan as the lifespan of a parent event (i.e. *"In addition, some languages provide mechanisms whereby data (parameters) can be bound in the event and/or condition part of a rule, then passed to the condition and/or action." "The nested transaction model used in HiPAC allows some of these possibilities. When a rule execution sub transaction fails, the failure event is returned to its parent, which has the option of spawning a sibling subtransaction to repair the error (this may be accomplished through the firing of another rule that is triggered by the failure event). Alternatively, failure can be propagated up the transaction tree all the way to the root (top) transaction."*)(Page 3, paragraph 5; page 17, paragraph 3).

As per claim 6, Dayal teaches a method further comprising propagating the lifespan or context of the parent node to all children nodes of the parent node (i.e. *"The nested transaction model used in HiPAC allows some of these possibilities. When a rule execution sub transaction fails, the failure event is returned to its parent, which has the option of spawning a sibling subtransaction to repair the error (this may be accomplished through the firing of another rule that is triggered by the failure event). Alternatively, failure can be propagated up the transaction tree all the way to the root (top) transaction."*)(Page 17, paragraph 3).

As per claim 7, Dayal teaches a method wherein a lifespan of an event is expressed as a predetermined duration of time (i.e. *"In addition, some languages provide mechanisms whereby data (parameters) can be bound in the event and/or condition part of a rule, then passed to the condition and/or action." "Some languages support rules triggered by temporal events. These might be absolute (e.g.: 08:00:00 hours on January 1, 1994), relative (e.g., 5 seconds after takeoff), or periodic (e.g., 17:00:00 hours every Friday)."*)(Page 3, paragraph 5; page 5, paragraph 2).

As per claim 8, Dayal teaches a method wherein the lifespan is dependent upon the associated event (i.e. *"In addition, some languages provide mechanisms whereby data (parameters) can be bound in the event and/or condition part of a rule, then passed to the condition and/or action."*)(Page 3, paragraph 5).

As per claim 9, Dayal teaches a method wherein the lifespan ends at a predetermined time, or recurs at a predetermined period of time (i.e. *"Some languages support rules triggered by temporal events. These might be absolute (e.g.: 08:00:00 hours on January 1, 1994), relative (e.g., 5 seconds after takeoff), or periodic (e.g., 17:00:00 hours every Friday)."*)(Page 5, paragraph 2).

As per claim 10 and 18, Dayal teaches a method further comprising combining events using a sequence operator to form a composite event having a time span (i.e. *"Some languages support rules triggered by temporal events. These might be absolute (e.g.: 08:00:00 hours on January 1, 1994), relative (e.g., 5 seconds after takeoff), or periodic (e.g., 17:00:00 hours every Friday)." "When an instance of this event type occurs, the formal parameters are bound to a specific employee (the one whose salary is being updated) and two specific integers (this employee's old salary and new salary)."*)(Page 5, paragraph 2; page 6, paragraph 3).

As per claim 11, Dayal teaches a method further comprising associating a lifespan with the sequence operator (i.e. *"Most importantly, unlike in AI systems, in active database systems rule processing is integrated with conventional database activity – queries, modifications, and transactions – and it is this activity that causes rules to become triggered and initiates rule processing."* The preceding text clearly indicates that a lifespan is contained within a rule that processes queries, modifications, and transactions, and the sequence operator is the active database system that initiates rule processing.)(Page 10, paragraph 3).

As per claim 12, Dayal teaches a method further comprising the step of storing a database rule as an event-condition-action (ECA) rule (i.e. *"The desired behavior is expressed in production rules (also called event-condition-action rules), which are defined and stored in the database."* The preceding text clearly indicates that ECA rules are stored in a database.)(Page 1, paragraph 3).

As per claims 16 and 19, Dayal teaches a method further comprises using a separate device external to said database to detect the combined events (i.e. *"The*

implementation of an active database system can include many useful features that support the rule programmer. Features for analyzing rule processing include the ability to trace rule execution, to display the current set of triggered rules, to query and browse the set of rules, and to cross-reference rules and data. Other useful features include the ability to control errors in rule programs, to activate and deactivate selected rules or groups of rules while the database system is processing transactions, and to experiment with rules on an off-line subset of a working database." The preceding text clearly indicates that a separate device external to said database is an example of one of many useful features that support the rule programmer.)(Page 19, section 4.2).

As per claims 17 and 20, Dayal teaches a method wherein said event consists of an instantaneous and atomic point of occurrence within an application that affects the state of said database (i.e. *"When the triggering event occurs, the condition is evaluated against the database; if the condition is satisfied, the action is executed."*)(Page 2, section 1).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farhan M. Syed whose telephone number is 571-272-7191. The examiner can normally be reached on 8:30AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMS

Apu Mofiz
Primary Examiner
TC 2100